

The **Vienna Graduate School on Computational Optimization (VGSCO)** is a joint research and training program of the **University of Vienna, TU Wien, IST Austria** and **Vienna University of Economics and Business** funded by the **Austrian Science Funds (FWF)**. Its main goal is to give PhD candidates a comprehensive training in different areas of optimization with special emphasis on algorithmic and numerical aspects. It fosters scientific collaboration between the PhD students and their advisors representing a broad spectrum of topics and areas in the field of optimization.

The VGSCO currently announces a PhD position in the area of

Numerical Algorithms for Nonsmooth Optimization (University of Vienna, Supervisor: Radu Ioan Boț)

Nonsmooth optimization has experienced an impressive development during the last decade, driven by its increasingly important role in optimal control of ODEs/PDEs, inverse problems, harmonic analysis, calculus of variations, mathematical finance, real algebraic geometry, etc., as well as by its great relevance for applications in computational science, engineering, and data science. The main topic of this thesis project is related to the development and study of numerical algorithms for nonsmooth convex and nonconvex optimization problems.

The topics of interest are: the formulation of suitable continuous time models which asymptotically approach the sets of critical points/local solutions, the derivation of numerical methods via various discretization schemes, the asymptotic analysis/convergence analysis of the trajectories/sequences of iterates, the study of asymptotic/convergence rates, and the analysis of the stability of the trajectories/iterative schemes. Special attention will be paid to the numerical implementation and validation of the new numerical algorithms in the context of real-world applications.

The candidates are expected to have a solid theoretical background in optimization theory, numerical analysis and functional analysis as well as strong computer skills.

The advertised position is associated with the Faculty of Mathematics of the **University of Vienna** in the Research Group on Applied Mathematics with Emphasis on Optimization of **Prof. Dr. Radu Ioan Boț**. The successful candidate will become a member of the **Vienna Graduate School on Computational Optimization**. An enrolment in the **Vienna School of Mathematics** is also envisaged. The duration of the employment is of 3 years with possibility of extension. The extent of employment is 30 hours per week. The annual gross salary is approximately 31,000 €. The planned start of the position is autumn 2020.

Application Requirements and Procedure

The candidates must have a master degree (or equivalent) in *Mathematics* at the moment the PhD position starts. The application documents should contain a letter of motivation; the scientific CV with publication list, if available; higher education certificates/diplomas; the diploma/master thesis and letter(s) of recommendation. Applications have to be submitted at: vgSCO.univie.ac.at/positions/application. The deadline for applications is **June 15, 2020**.